AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A geographic and space positioning system, ~~characterized in that it comprises~~ comprising :

a first, a second, and a third base ~~(A, B, C),~~ which are fixed in relation to the earth, ~~but~~ spaced away and ~~disaligned~~ each having a different alignment in relation to each other and each having a previously known location;

a space platform ~~(S)~~, simultaneously visible from the three fixed bases ~~(A, B, C)~~ and which moves to successive positions, as a function of time, according to a trajectory that is inclined in relation to the rotation axis of the earth;

a transmitter ~~(1)~~, installed in at least one of the fixed bases and operatively associated with each of the parts defined by the fixed bases ~~(A, B, C)~~ and the space platform ~~(S)~~ in order to emit pulses in a determined frequency, each pulse in a predetermined reference instant;

a receiver ~~(2)~~ for each of the fixed bases, each receiver being installed in one of the fixed bases and operatively associated with each fixed base ~~(A, B, C)~~ and with the transmitter ~~(1)~~ and the space platform, in order to receive said pulses in a trajectory covering the distance between the space platform ~~(S)~~ and the fixed base ~~(A, B, C)~~ associated with the receiver ~~(2)~~; and

a control unit ~~(3)~~ ~~which is~~ operatively connected to both the transmitter ~~(1)~~ and ~~the~~ each receiver ~~(2)~~, in order to calculate, for each pulse emission instant, the lateral edges of a tetrahedron, whose vertices are defined by the three fixed bases ~~(A, B, C)~~ and by the space platform ~~(s)~~, based upon the determination of the propagation time of each pulse, in said trajectory, between the space platform ~~(S)~~ and each fixed base ~~(A, B, C)~~ in order to allow determining a respective extension of

the trajectory of the space platform ~~(S)~~, while the latter is visible by the fixed bases ~~(A, B, C)~~ , the tetrahedron edges being obtained with the time differences between the instant of the emission of each pulse and the instant of the arrival at each fixed bases.

2. (Currently Amended) The system ~~System,~~ according to claim 1, wherein ~~characterized in that~~ the transmitter ~~(1)~~ is installed in the first fixed base ~~(A)~~ in order to emit pulses in a determined frequency, each pulse in a predetermined reference instant and containing identification of said first fixed base ~~A~~ and of the emission instant of said pulse, each pulse being transmitted to all fixed bases ~~(A, B, C)~~ through a communication device ~~(5)~~ provided in the space platform ~~(S)~~.

3. (Currently Amended) The system ~~System,~~ according to claim 1, ~~characterized in that it comprises~~ further comprising:

another transmitter ~~(1)~~ installed in the second fixed base ~~(B)~~ in order to emit pulses in a determined frequency, each pulse in the same predetermined reference instant of each pulse emitted by the transmitter ~~(1)~~ provided in the first fixed base ~~(A)~~ and containing identification of the second fixed base ~~(B)~~ and of the emission instant of said pulse; and

another receiver ~~(2)~~ provided in the third fixed base ~~(C)~~ in order to receive and identify the pulses sent by the second fixed base ~~(B)~~ and transmitted by the space platform ~~(S)~~, the control unit ~~(3)~~ calculating, for each pulse emission instant of the first and second fixed bases ~~(A, B)~~ the lateral edges of a tetrahedron with three vertices defined by the three fixed bases ~~(A, B, C)~~ and with the fourth vertex defined by the space platform ~~(S)~~, based on the time differences between the emission instant of a pulse from the first fixed base ~~(A)~~ and its reception in the latter, in the second and in the third fixed base ~~(B, C)~~, respectively, and on the time difference between the emission of the pulse

from the second fixed ~~(C)~~, in order to allow determining [[a]] the respective extension of the trajectory of the space platform ~~(S)~~, while it is visible by the fixed bases.

4. (Currently Amended) The system ~~System,~~ according to claim 1, wherein ~~characterized in that~~ the control unit ~~(3)~~ is operatively connected to the second and to the third fixed bases ~~(B, C)~~ through other respective communication means provided in each one of said fixed bases ~~(B, C)~~.

5. (Currently Amended) The system ~~System,~~ according to claim 1, wherein ~~characterized in that~~ the control unit ~~(3)~~ is operatively connected to the fixed bases ~~(A, B, C)~~.

6. (Currently Amended) The system ~~System,~~ according to claim 5, wherein ~~characterized in that~~ each of the first, the second and the third fixed bases ~~(A, B, C)~~ is provided with a respective control unit ~~(3)~~, said control units ~~(3)~~ defining the other communication devices and being operatively connected to another control unit ~~(3)~~ remote in relation to those of said fixed bases ~~(A, B, C)~~.

7. (Currently Amended) The system ~~System,~~ according to claim 2, wherein ~~characterized in that~~ the communication device ~~(5)~~ is a transceiver.

8. (Currently Amended) The system ~~System,~~ according to claim 3, further comprises ~~characterized in that it comprises, in each fixed base (A, B, C),~~ a ~~respective~~ precision clock in each of the fixed bases ~~(4)~~, the precision clocks ~~(4)~~ being synchronized with each other.

9. (Currently Amended) The system ~~System,~~ according to claim 1, further comprises ~~characterized in that it comprises, in~~ a target ~~(P)~~, whose geographic position is to be determined and in relation to which the space platform ~~(S)~~ is visible~~.;~~ wherein the target comprises:

a receiver ~~(2)~~, receiving the pulses emitted by the transmitter ~~(1)~~ and retransmitted through the space platform ~~(S)~~ and being operatively connected to the control unit ~~(3)~~, which calculates a straight line segment connecting, to the target ~~(P)~~, ~~the~~ a fourth vertex of a tetrahedron, in order to allow determining the position of said target ~~(P)~~ through the successive intersection of multiple spherical loci ~~(LE)~~, each locus being represented by a sphere and with at least three of said spheres presenting the center in the space platform ~~(S)~~ and the radius corresponding to the straight line segment defined between said space platform ~~(S)~~ and the target ~~(P)~~, in a determined instant, with the number of intersections of the spherical loci ~~(LE)~~ being those sufficient to determine a single point representative of the position of the target ~~(P)~~.

10. (Currently Amended) The system ~~System,~~ according to claim 9, wherein ~~characterized in that~~ the spherical loci ~~(LE)~~ are sufficient to define a circle in the first intersection, two points of this circle in the second intersection and only one point in the space in the third intersection.

11. (Currently Amended) The system ~~System,~~ according to claim 10, wherein ~~characterized in that~~ at least one spherical locus ~~(LE)~~ presents the center coinciding with the center ~~(0)~~ of the earth.

12. (Currently Amended) The system ~~System,~~ according to claim 11, wherein ~~characterized in that~~ the control unit ~~(3)~~ calculates, for each consecutive pulse of the first fixed base ~~(A)~~, a respective spherical locus ~~(LE)~~ and its circular intersection ~~(IC)~~ on the earth's surface, said control unit ~~(3)~~ calculating, for each three consecutive pulses, the respective circular intersection ~~(IC)~~ on the earth's surface, said circular intersections ~~(IC)~~ mutually intercepting so as to define a single geometric position of the target ~~(P)~~ on the earth's surface.

13. (Currently Amended) The system ~~System,~~ according to claim 12, wherein ~~characterized in that,~~ for each respective spherical locus ~~(LE)~~ and its circular intersection ~~(IC)~~ on the earth's surface, the control unit ~~(3)~~ utilizes, for each consecutive pulse of the first fixed base ~~(A)~~, a respective consecutive pulse of the second fixed base ~~(B)~~.

14. (Currently Amended) The system ~~System,~~ according to claim 1, wherein ~~characterized in that~~ the fixed bases ~~(A, B, C)~~ are situated on the earth's surface.

15. (Currently Amended) The system ~~System,~~ according to claim 1, wherein ~~characterized in that~~ the control unit ~~(3)~~ calculates, based on the time differences of propagation of

each pulse between the space platform ~~(S)~~ and a corresponding fixed base ~~(A, B, C)~~, for consecutive pulses, the equation of motion of the space platform ~~(S)~~.

16. (Currently Amended) The system ~~System,~~ according to claim 1, wherein ~~characterized in that~~ the control unit ~~(3)~~ calculates, for consecutive pulses transmitted by the first fixed base ~~(A)~~, the equation of motion of the space platform ~~(S)~~.

17. (Currently Amended) The system ~~System,~~ according to claim 3, wherein ~~characterized in that~~ the control unit ~~(3)~~ calculates, for consecutive pulses transmitted by the second fixed base ~~(B)~~, the equation of motion of the space platform ~~(S)~~.

18. (Currently Amended) The system ~~System,~~ according to claim 16, wherein ~~characterized in that~~ the control unit ~~(3)~~ calculates the position of ~~each~~ at least one target ~~(P)~~ from the equation of motion of the space platform ~~(S)~~.

19. (Currently Amended) The system ~~System,~~ according to claim 18, wherein ~~characterized in that~~ the target ~~(P)~~ further comprises ~~is provided with~~ a control unit ~~(3)~~ which calculates the position of said target ~~(P)~~ from the equation of motion of the space platform ~~(S)~~.

20. (Currently Amended) The system ~~System,~~ according to claim 19, wherein the target further comprises ~~characterized in that it includes~~ a precision clock ~~(4) in the target (P)~~.

21. (Currently Amended) The system ~~System,~~ according to claim 2, wherein ~~characterized in that~~ the communication device ~~(5)~~ utilizes radio-waves.

22. (Currently Amended) A geographic and space positioning process, comprising ~~characterized in that it comprises~~ the steps of:

~~a.~~ providing a first, a second, and a third base ~~(A, B, C)~~, which are fixed in relation to the earth and which are spaced away and ~~disaligned~~ each having a different alignment in relation to each other, each having a previously known location;

~~b.~~ providing a space platform ~~(S)~~ visible by the fixed bases ~~(A, B, C)~~ and which moves to successive positions, as a function of time, according to a trajectory that is inclined in relation to the rotation axis of the earth;

~~c.~~ providing a transmitter ~~(1)~~ operatively associated with each of the parts defined by the fixed bases ~~(A, B, C)~~ and the space platform ~~(S)~~ in order to emit pulses in a determined frequency, each pulse in a predetermined reference instant;

~~d.~~ providing a receiver ~~(2)~~ operatively associated with each fixed base ~~(A, B, C)~~ and with the transmitter ~~(1)~~, in order to receive said pulses in a trajectory covering the distance between the space platform ~~(S)~~ and the fixed base ~~(A, B, C)~~ associated with the receiver ~~(2)~~; and

~~e.~~ providing a control unit ~~(3)~~ which is operatively connected to both the transmitter ~~(1)~~ and the receive ~~(2)~~ in order to calculate, for each pulse emission instant, each lateral edges of a tetrahedron, with three vertices defined by the three fixed bases ~~(A, B, C)~~ and with a fourth vertex defined by the space platform ~~(S)~~, based on the time differences of propagation of each pulse

between the space platform ~~(S)~~ and a corresponding fixed base ~~(A, B, C)~~, in order to allow determining a respective extension of the trajectory of the space platform ~~(S)~~, while the latter is visible by the fixed bases ~~(A, B, C)~~.

23. (Currently Amended) The process ~~Process,~~ according to claim 22, wherein ~~characterized in that, in step "a", the~~ a transmitter ~~(1) is installed~~ in the first fixed base ~~(A) in order to emit~~ emits pulses in a determined frequency, each pulse in a predetermined reference instant and containing identification of said fixed base ~~(A)~~ and of the instant of emission of said pulse, each pulse being transmitted to all fixed bases ~~(A, B, C)~~ through a communication device ~~(5)~~ provided in the space platform ~~(S)~~, said process including the additional steps of:

transmitting, through the first fixed base ~~(A)~~ pulses, each containing a coded information of the reference emission instant of each said pulse and of the identification of said first fixed base ~~(A)~~;

receiving and transmitting, through a communication device ~~(5)~~ provided in the space platform ~~(S)~~, said pulses transmitted by the first fixed base ~~(A)~~;

receiving, in the first, in the second and in the third fixed bases ~~(A, B, C)~~, the pulse emitted by the first fixed base ~~(A)~~ and transmitted by the communication device ~~(5)~~; calculating the time differences of each pulse received in the first, in the second and in the third fixed bases ~~(A, B, C)~~ in relation to the emission time of each said pulse emitted by the first fixed base ~~(A)~~;

comparing said time differences and informing them to the control unit ~~(3)~~ through a second data communication device; and

determining, in the control unit ~~(3)~~, for each pulse emission instant of the first fixed base ~~(A)~~, said lateral edges of a tetrahedron, with three vertices defined by the three fixed bases ~~(A, B, C)~~ and a fourth vertex defined by the space platform ~~(S)~~, based on the time differences between the

emission instant of a pulse of the first fixed base ~~(A)~~ and its reception in the first, in the second and in the third fixed bases ~~(A, B, C)~~, respectively.

24. (Currently Amended) The process ~~Process,~~ according to claim 23, further comprising ~~characterized in that it includes~~ the steps of:

providing a precision clock ~~(4)~~ installed in each of the first, the second and the third fixed bases ~~(A, B, C)~~, said precision clocks ~~(4)~~ being synchronized with each other;

providing another transmitter installed in the second fixed base ~~(B)~~ in order to emit pulses in a determined frequency, each pulse in the same predetermined reference instant of a pulse emitted by the transmitter ~~(1)~~ and containing identification of the second fixed base ~~(B)~~ and of the emission instant of said pulse;

synchronizing the times of the precision clocks ~~(4)~~ in the three fixed bases ~~(A, B, C)~~ to the same common time reference;

transmitting pulses, through the first fixed base ~~(A)~~, each pulse containing a coded information about the reference emission instant of each said pulse and about the identification of said first fixed base ~~A~~;

transmitting pulses, through the second fixed base ~~(B)~~, each pulse containing a coded information about the reference emission instant of each said pulse in the emission instant of each pulse from the first fixed base ~~(A)~~ and about the identification of said second fixed base ~~B~~;

receiving and transmitting through a communication device ~~(5)~~ provided in the space platform ~~(S)~~, said pulses transmitted by the first and the second fixed bases ~~(A, B)~~;

receiving, in the second and in the third fixed bases ~~(B, C)~~, the pulse emitted by the first fixed base ~~A~~ and transmitted by the communication device ~~(5)~~;

receiving, in the third fixed base ~~(C)~~, the pulse emitted by the second fixed base ~~B~~ and transmitted by the communication device ~~(5)~~;

calculating the time differences of each pulse received in the third fixed base ~~(C)~~ in relation to the emission time of each said pulse emitted by the second fixed base ~~(B)~~;

comparing said time differences and informing them to the control unit ~~(3)~~, through a second data communication device; and

determining in the control unit ~~(3)~~, for each pulse emission instant of the first and the second fixed bases ~~(A, B)~~, the lateral edges of a tetrahedron with three vertices defined by the three fixed bases ~~(A, B, C)~~ and the fourth vertex defined by the space platform ~~(S)~~, based on the time differences between the emission instant of a pulse from the first fixed base ~~(A)~~ and its reception in the second and in the third fixed bases ~~(B, C)~~, respectively, and on the time difference between the emission of the pulse of the second fixed base ~~(B)~~ and its reception in the third fixed base ~~(C)~~, in order to allow determining a respective extension of the trajectory of the space platform ~~(S)~~, while the latter is visible by the fixed bases.

25. (Currently Amended) The process ~~Process,~~ according to claim 23, further comprising ~~characterized in that it comprises~~ the additional steps of:

providing, in a target ~~(P)~~, a receiver ~~(2)~~ operatively associated with the transmitter ~~(1)~~ in order to receive said pulses in a trajectory covering the distance between the space platform ~~(S)~~ and said target ~~(P)~~, as well as with the control unit ~~(3)~~, said control unit ~~(3)~~ calculating a straight line segment which connects the target ~~(P)~~ to the space platform ~~(S)~~, in order to allow determining the

position of said target ~~(P)~~ through the successive intersections of multiple spherical loci ~~(LE)~~, each locus being represented by a sphere, with at least three of said spheres presenting the center in the space platform ~~(S)~~ and the radius corresponding to the straight line segment defined between said space platform ~~(S)~~ and the target ~~(P)~~ in a determined instant, and the number of intersections of the spherical loci ~~(LE)~~ being those sufficient to determine a single point representative of the position of the target ~~(P)~~.

26. (Currently Amended) The process ~~Process,~~ according to claim 25, further including ~~characterized in that it includes~~ the additional steps of calculating, through the control unit ~~(3)~~:

the intersection of each two successive spherical loci ~~(LE1, LE2)~~, in order to define a first circular intersection ~~(IC1)~~ in this intersection;

the intersection of a third spherical locus ~~(LE3)~~ with the first circular intersection ~~(IC1)~~, in order to define a second circular intersection ~~(IC2)~~;

the intersection of the second circular intersection ~~(IC2)~~ with the first circular intersection ~~(IC1)~~, in order to define two localization points~~.~~; and

the intersection of a fourth spherical locus with the second circular intersection ~~(IC2)~~, in order to define a third circular intersection ~~(IC3)~~ intercepting one of the two localization points.

27. (Currently Amended) The process ~~Process,~~ according to claim 26, ~~characterized in that~~ wherein one of the spherical loci has the center coinciding with the center ~~(0)~~ of the earth and the other spherical loci have the center in the space platform ~~(S)~~.

28. (Currently Amended) The process ~~Process,~~ according to claim 23, ~~characterized in that it includes~~ further comprising a step of calculating, in the control unit ~~(3)~~, for consecutive pulses transmitted by the first fixed base ~~(A)~~, the equation of motion of the space platform ~~(S)~~.

29. (Currently Amended) The process ~~Process,~~ according to claim 24, ~~characterized in that it includes~~ further comprising a step of calculating, in the control unit ~~(3)~~, for consecutive pulses transmitted by the first fixed base ~~(A)~~ and by the second fixed base ~~(B)~~, the equation of motion of the space platform ~~(S)~~.

30. (Currently Amended) The process ~~Process,~~ according to ~~any one of the~~ claims 28 ~~and 29, characterized in that it includes~~ further comprising a step of calculating, in the control unit ~~(3)~~, the position of each target ~~(P)~~ based on the equation of motion of the space platform ~~(S)~~.

31. (Currently Amended) The process ~~Process,~~ according to claim 30~~, characterized in that it includes~~ further comprising a step of providing, in each target ~~(P)~~, a control unit ~~(3)~~ calculating the position of said target ~~(P)~~ based on the equation of motion of the space platform ~~(S)~~.

32. (Currently Amended) The process ~~Process,~~ according to claim 25~~, characterized in that it includes~~ further comprising a step of providing a precision clock ~~(4)~~ in each target ~~(P)~~.

33. (Currently Amended) The process ~~Process,~~ according to claim 22~~, characterized in that it includes~~ further comprising the step of ~~steps for~~ correcting the time delays in the transmission of pulses through the communication device ~~(5)~~.